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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,992	11/07/2001	Robert B. Dybdal	700700-017	3329

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EXAMINER

SAMS, MATTHEW C

ART UNIT PAPER NUMBER

2643

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/007,992	<b>Applicant(s)</b> DYBDAL ET AL.	
	<b>Examiner</b> Matthew C. Sams	<b>Art Unit</b> 2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 9 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-8, 10-20 and 22-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/28/2005 has been entered.
2. This office action has been changed to reflect the amendment filed on 11/28/2005.
3. Claims 9 and 21 have been canceled.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, 10, 12-15, 20, 22-26 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent et al. (US-6,542,716 hereafter, Dent) in view of Wiedeman (US-6,587,687).

Regarding claim 1, Dent teaches of an embodiment for determining the communication link quality employing beacon signals. (Col. 4 lines 12-23 and 33-35) Dent teaches of an embodiment that includes satellites with beacon transmitters including continuous wave tone and coded signals. (Col. 4 lines 40-46) Dent teaches of a communications device that is capable of establishing UHF communications links with satellites, and with means for receiving and processing the beacon signals to determine the quality of the UHF. (Col. 3 lines 48-50 and Col. 4 lines 15-23) Dent does not specifically state that the continuous wave and coded signals are different for each of the communications satellites. However, it is obvious that a mobile communications device must be able to determine a difference between satellite channel transmissions because the channel transmissions would interfere with each other when a mobile communications device was an equal distance away from two different transmission sources. (Col. 5 lines 23-43) Dent differs from the claimed invention by not mentioning providing the communications device with means for communicating to a user information pertaining to the quality of the UHF communications links and identifying individual component impairments of a total link degradation. However, Wiedeman teaches satellite communication systems that communicates to a user information pertaining to the quality of the communication links (Col. 6 line 63 through Col. 7 line 13), identifies various link impairments and communicates actions to compensate for the impairments. (Col. 10 lines 1-14) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the identification of link impairments of Wiedeman into the satellite communication system of Dent. One of ordinary skill in the art would have been motivated to do this since being able to identify

the various link impairments allows for proper compensation for that specific impairment. (Col. 10 lines 7-10)

Regarding claim 2, Dent in view of Wiedeman teaches of a coded signal in a communications bandwidth employed by the communications satellite and a continuous wave tone that is out of the communications bandwidth. (Dent Col. 4 lines 33-56)

Regarding claim 3, Dent in view of Wiedeman teaches a communication device comprising a transponder. (Dent Fig. 1 and Col. 3 lines 42-44) In the Applicant's specification, a "transponder" is used interchangeably with a "mobile telephone". (Page 1 [0010])

Regarding claim 4, Dent in view of Wiedeman teaches a method of a communication device that comprises a voice and data communicator. (Dent Col. 3 lines 42-48 and Col. 4 lines 23-32)

Regarding claim 6, Dent in view of Wiedeman teaches a method of determining communication link quality employing beacon signals that comprises a beacon receiver. (Dent Col. 4 lines 12-32)

Regarding claim 7, Dent in view of Wiedeman teaches a method of determining communication link quality employing beacon signals that comprises a continuous wave tone receiver. (Dent Col. 4 lines 12-15, 33-35 and 49-56)

Regarding claim 8, Dent in view of Wiedeman teaches a method of determining communication link quality employing beacon signals that comprises a coded signal beacon receiver. (Dent Col. 4 lines 12-32)

Regarding claim 10, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by communicating information as

Art Unit: 2643

a real time indication of link quality. (Wiedeman Col. 3 lines 21-28 and Col. 5 lines 5-16)

Regarding claim 12, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by communicating noise information. (Wiedeman Col. 11 lines 40-48)

Regarding claim 13, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by communicating interference information. (Wiedeman Col. 3 lines 30-40)

Regarding claim 14, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by communicating scintillation information pertaining to multipath or ionospheric effects. (Wiedeman Col. 5 lines 5-16)

Regarding claim 15, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by providing the communications device with a means for adjusting a transmission power of the communications device. (Wiedeman Col. 5 line 65 through Col. 6 line 12, Col. 6 line 63 through Col. 7 line 26)

Regarding claim 20, Dent teaches of an embodiment for determining the communication link quality employing beacon signals. (Col. 4 lines 12-23 and 33-35) Dent teaches of an embodiment that includes satellites with beacon transmitters including continuous wave tone and coded signals. (Col. 4 lines 40-46) Dent teaches of a communications device that is capable of establishing UHF communications links with satellites, and with means for receiving and processing the beacon signals to determine the quality of the UHF. (Col. 3 lines 48-50 and Col. 4 lines 15-23) Dent does not specifically state that the continuous wave and coded signals are different for each

Art Unit: 2643

of the communications satellites. However, it is obvious that a mobile communications device must be able to determine a difference between satellite channel transmissions because the channel transmissions would interfere with each other when a mobile communications device was an equal distance away from two different transmission sources. (Col. 5 lines 23-43) Dent differs from the claimed invention by not mentioning providing the communications device with means for communicating to a user information pertaining to the quality of the UHF communications links and identifying individual component impairments of a total link degradation. However, Wiedeman teaches satellite communication systems that processes and communicates to a user information pertaining to the quality of the communication links (Col. 6 lines 28-36 and Col. 6 line 63 through Col. 7 line 13), identifies various link impairments and communicates actions to compensate for the impairments. (Col. 10 lines 1-14) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the identification of link impairments of Wiedeman into the satellite communication system of Dent. One of ordinary skill in the art would have been motivated to do this since being able to identify the various link impairments allows for proper compensation for that specific impairment. (Col. 10 lines 7-10)

Regarding claim 22, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals wherein the link impairment factors include a propagation loss factor. (Col. 17 line 47 through Col. 18 line 7)

Regarding claim 23, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by communicating interference information. (Wiedeman Col. 3 lines 30-40)

Regarding claim 24, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by communicating noise information. (Wiedeman Col. 11 lines 40-48)

Regarding claim 25, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals wherein the processor is programmed to process data pertaining to variations in measured signal levels of the beacon signals to determine one or more link impairments. (Wiedeman Col. 17 line 47 through Col. 18 line 7)

Regarding claim 26, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by communicating scintillation information pertaining to multipath or ionospheric effects. (Wiedeman Col. 5 lines 5-16)

Regarding claim 28, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by using UHF communication satellites. (Dent Col. 3 lines 48-52)

Regarding claim 29, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by communication stations as part of one or more terrestrial cellular networks. (Dent Fig. 1 and Col. 3 lines 42-50)

Regarding claim 30, Dent teaches of an embodiment for determining the communication link quality employing beacon signals. (Col. 4 lines 12-23 and 33-35) Dent teaches of an embodiment that includes satellites with beacon transmitters including continuous wave tone and coded signals. (Col. 4 lines 40-46) Dent teaches of a communications device that is capable of establishing UHF communications links with satellites, and with means for receiving and processing the beacon signals to



Art Unit: 2643

determine the quality of the UHF. (Col. 3 lines 48-50 and Col. 4 lines 15-23) Dent does not specifically state that the continuous wave and coded signals are different for each of the communications satellites. However, it is obvious that a mobile communications device must be able to determine a difference between satellite channel transmissions because the channel transmissions would interfere with each other when a mobile communications device was an equal distance away from two different transmission sources. (Col. 5 lines 23-43) Dent differs from the claimed invention by not mentioning providing the communications device with means for communicating to a user information pertaining to the quality of the UHF communications links and identifying individual component impairments of a total link degradation. However, Wiedeman teaches satellite communication systems that processes and communicates to a user information pertaining to the quality of the communication links (Col. 6 lines 28-36 and Col. 6 line 63 through Col. 7 line 13), identifies various link impairments and communicates actions to compensate for the impairments. (Col. 10 lines 1-14) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the identification of link impairments of Wiedeman into the satellite communication system of Dent. One of ordinary skill in the art would have been motivated to do this since being able to identify the various link impairments allows for proper compensation for that specific impairment. (Col. 10 lines 7-10)

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Wiedeman as applied to claim 1 above, and further in view of Rydbeck et al. (US-5,930,718 hereafter, Rydbeck).

Art Unit: 2643

Regarding claim 11, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals by communicating information such as voice and data information being processes by a processor. (Wiedeman Col. 6 lines 28-36) Dent in view of Wiedeman differs from the claimed invention by not mentioning a display device being connected to the communication device. However, Rydbeck teaches a display device connected to a satellite phone. (Col. 6 lines 39-53) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the display for a satellite phone of Rydbeck into the communication device of Dent in view of Wiedeman. One of ordinary skill in the art would have been motivated to do this since having a display allows for viewing the data that is downloaded through the communication link and for viewing alerts. (Col. 6 lines 39-53 and Col. 11 lines 26-29)

7. Claims 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Wiedeman as applied to claim 15 above, and further in view of Hegendoerfer (US-6,326,922).

Regarding claims 16, 18 and 19, Dent in view of Wiedeman teaches a method of determining the communication link quality employing beacon signals while having a communications device that is capable of adjusting its transmission power. (Wiedeman Col. 5 line 65 through Col. 6 line 12, Col. 6 line 63 through Col. 7 line 26) Dent in view of Wiedeman differs from the claimed invention by not teaching of a collapsible transmission power booster being a high gain Yagi antenna. However, Hegendoerfer teaches of a foldable high gain antenna that is a Yagi antenna (Fig. 4). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to

Art Unit: 2643

incorporate the foldable high gain Yagi antenna of Hegendoerfer with the communications device of Dent in view of Wiedeman. One of ordinary skill in the art would be motivated to do this since Hegendoerfer's design allows for the mobile communications device to have a high gain antenna that is constructed on a printed circuit board, which is cost-effective for mass manufacturing. (Col. 3 lines 5-35)

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Wiedeman and Hegendoerfer as applied to claim 16 above, and further in view of Rudish (US-6,219,006).

Regarding claim 17 Dent in view of Wiedeman and Hegendoerfer teaches a method of determining the communication link quality employing beacon signals while having a communications device that is capable of adjusting its transmission power (Wiedeman Col. 5 line 65 through Col. 6 line 12, Col. 6 line 63 through Col. 7 line 26) that includes a high gain antenna. (Hegendoerfer Fig. 4 and Col. 3 lines 5-35) Dent in view of Wiedeman and Hegendoerfer differs from the claimed invention by not teaching the high gain antenna as being a log periodic antenna. However, Rudish teaches of a compact log periodic antenna (Fig. 2 [10]). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the log periodic antenna of Rudish with the communications device of Dent in view of Wiedeman and Hegendoerfer. One of ordinary skill in the art would be motivated to do this since Rudish's design allows for a wide bandwidth with increased efficiency and sensitivity. (Col. 2 lines 33-40)

9. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Wiedeman as applied to claim 20 above, and further in view of Duggan (US-4,776,035).

Regarding claim 27, Dent in view of Wiedeman teaches determining communication link quality employing beacon signals of claim 20, but differs from the claimed invention by not mentioning sequentially determining the link qualities. However, Duggan teaches of a processor that is programmed to sequentially determine the link qualities. (Col. 12 line 63 through Col. 13 line 9) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the sequentially determined link qualities of Duggan into the communication system of Dent in view of Wiedeman. One of ordinary skill in the art would have been motivated to do this since multitasking with a processor requires more power and memory, which would drive up costs of the invention.

10. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view Wiedeman as applied to claim 1 and 20 above, and further in view of the Applicant's admitted prior art, Dybdal et al. (US-5,781,845 hereafter, Dybdal).

Regarding claim 31, Dent in view of Wiedeman teaches the limitations of claim 1, including multipath considerations (Wiedeman Col. 2 lines 7-18 and Col. 4 lines 54-56), but differs from the claimed invention by not mentioning estimating values of time delay components resulting from multipath. However, Dybdal teaches using weighting values for time delays in equalization for a plurality of antenna elements. (Col. 8 lines 30-51) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the time delays of Dybdal into the communication system of

Art Unit: 2643

Dent in view of Wiedeman. One of ordinary skill in the art would have been motivated to do this since weighting values for time delay can reduce the signal degradation of reflections. (Col. 4 lines 58-18)

Regarding claim 32, Dent in view of Wiedeman teach the limitations of claim 20, including multipath considerations (Wiedeman Col. 2 lines 7-18 and Col. 4 lines 54-56), but differs from the claimed invention by not mentioning estimating values of time delay components resulting from multipath. However, Dybdal teaches using weighting values for time delays in equalization for a plurality of antenna elements. (Col. 8 lines 30-51) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the time delays of Dybdal into the communication system of Dent in view of Wiedeman. One of ordinary skill in the art would have been motivated to do this since weighting values for time delay can reduce the signal degradation of reflections. (Col. 4 lines 58-18)

### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Sams whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 7:30-5.

Art Unit: 2643

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571)272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MCS  
2/1/2006

  
**DUC NGUYEN**  
**PRIMARY EXAMINER**